

ABSTRACT

A silicon nitride abrasion resistant member is formed of silicon nitride sintered body containing 2% to 4% by mass of a rare earth element in terms of oxide thereof as a sintering aid, 2% to 6% by mass of an Al component in terms of oxide thereof, 5 and 2% to 7% by mass of silicon carbide. The silicon nitride sintered body has a porosity of 1% or less, a three-point bending strength of 800 to 1000 MPa, and a fracture toughness of 5.7 to 6.5 MPa·m^{1/2}. According to this structure, even when an inexpensive silicon nitride powder manufactured by metal nitriding method is used, there can be provided a silicon nitride abrasion resistant member having a 10 mechanical strength, high abrasion resistance, and a rolling life, equal to or higher than those of conventional silicon nitride sintered bodies, and excellent workability, and a method for manufacturing the member can be provided.